Dell Vostro 2520
Owner's Manual

Regulatory Model: P18F
Regulatory Type: P18F0032

Notes, Cautions, and Warnings

NOTE: A NOTE indicates important information that helps you make better use of your computer.

CAUTION: A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

WARNING: A WARNING indicates a potential for property damage, personal injury, or death.

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Contents

1

Working on Your Computer

Before Working Inside Your Computer

Use the following safety guidelines to help protect your computer from potential damage and to help to ensure your personal safety. Unless otherwise noted, each procedure included in this document assumes that the following conditions exist:

- You have performed the steps in Working on Your Computer.
- You have read the safety information that shipped with your computer.
- A component can be replaced or--if purchased separately--installed by performing the removal procedure in reverse order.

WARNING: Before working inside your computer, read the safety information that shipped with your computer. For additional safety best practices information, see the Regulatory Compliance Homepage at www.dell.com/regulatory_compliance

CAUTION: Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. Read and follow the safety instructions that came with the product.

CAUTION: To avoid electrostatic discharge, ground yourself by using a wrist grounding strap or by periodically touching an unpainted metal surface, such as a connector on the back of the computer.

CAUTION: Handle components and cards with care. Do not touch the components or contacts on a card. Hold a card by its edges or by its metal mounting bracket. Hold a component such as a processor by its edges, not by its pins.

CAUTION: When you disconnect a cable, pull on its connector or on its pull-tab, not on the cable itself. Some cables have connectors with locking tabs; if you are disconnecting this type of cable, press in on the locking tabs before you disconnect the cable. As you pull connectors apart, keep them evenly aligned to avoid bending any connector pins. Also, before you connect a cable, ensure that both connectors are correctly oriented and aligned.

NOTE: The color of your computer and certain components may appear differently than shown in this document.

To avoid damaging your computer, perform the following steps before you begin working inside the computer.

1. Ensure that your work surface is flat and clean to prevent the computer cover from being scratched.
2. Turn off your computer (see Turning Off Your Computer).
3. If the computer is connected to a docking device (docked) such as the optional Media Base or Battery Slice, undock it.

   CAUTION: To disconnect a network cable, first unplug the cable from your computer and then unplug the cable from the network device.

4. Disconnect all network cables from the computer.
5. Disconnect your computer and all attached devices from their electrical outlets.

6. Close the display and turn the computer upside-down on a flat work surface.

   NOTE: To avoid damaging the system board, you must remove the main battery before you service the computer.

7. Remove the main battery.
8. Turn the computer top-side up.
9. Open the display.
10. Press the power button to ground the system board.

    CAUTION: To guard against electrical shock, always unplug your computer from the electrical outlet before opening the display.

    CAUTION: Before touching anything inside your computer, ground yourself by touching an unpainted metal surface, such as the metal at the back of the computer. While you work, periodically touch an unpainted metal surface to dissipate static electricity, which could harm internal components.

11. Remove any installed ExpressCards or Smart Cards from the appropriate slots.

Turning Off Your Computer

CAUTION: To avoid losing data, save and close all open files and exit all open programs before you turn off your computer.

1. Shut down the operating system:
   - In Windows 7:

     Click **Start**, then click **Shut Down.**
   - In Windows Vista:

     Click **Start**, then click the arrow in the lower-right corner of the **Start** menu as shown below, and then click **Shut Down**.
   - In Windows XP:

     Click **Start** → **Turn Off Computer** → **Turn Off** . The computer turns off after the operating system shutdown process is complete.
2. Ensure that the computer and all attached devices are turned off. If your computer and attached devices did not automatically turn off when you shut down your operating system, press and hold the power button for about 6 seconds to turn them off.

After Working Inside Your Computer

After you complete any replacement procedure, ensure you connect any external devices, cards, and cables before turning on your computer.

CAUTION: To avoid damage to the computer, use only the battery designed for this particular Dell computer. Do not use batteries designed for other Dell computers.

1. Connect any external devices, such as a port replicator, battery slice, or media base, and replace any cards, such as an ExpressCard.
2. Connect any telephone or network cables to your computer.

CAUTION: To connect a network cable, first plug the cable into the network device and then plug it into the computer.

3. Replace the battery.
4. Connect your computer and all attached devices to their electrical outlets.
5. Turn on your computer.

2

Removing and Installing Components

This section provides detailed information on how to remove or install the components from your computer.

Recommended Tools

The procedures in this document may require the following tools:

- Small flat-blade screwdriver
- Phillips screwdriver
- Small plastic scribe

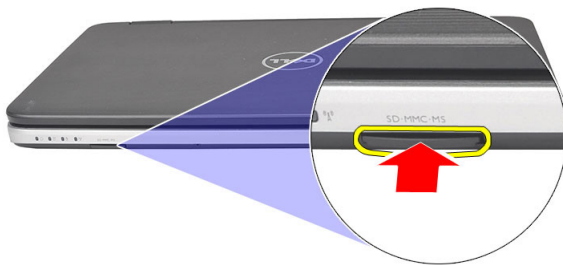
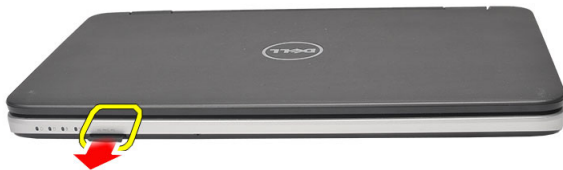
Removing the Battery

1. Follow the procedures in *Before Working Inside Your Computer*.
2. Slide the release latches to unlock the battery.
3. Slide the battery and remove it from the computer.

Installing the Battery

1. Slide the battery into its slot until it clicks into place.
2. Follow the procedures in *After Working Inside Your Computer*.

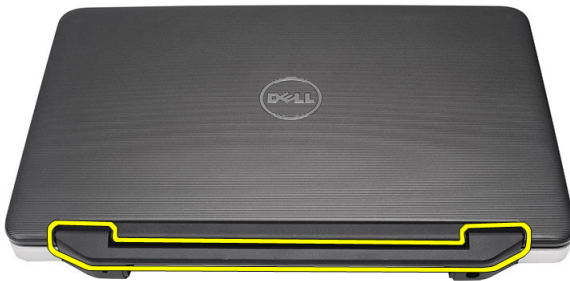
Removing the Secure Digital (SD) Card

1. Follow the procedures in *Before Working Inside Your Computer*.
2. Press in on the SD memory card to release it from the computer.
3. Slide the memory card out of the computer.

Installing the Secure Digital (SD) Card

1. Push the memory card into the compartment until it clicks into place.
2. Follow the procedures in *After Working Inside Your Computer*.

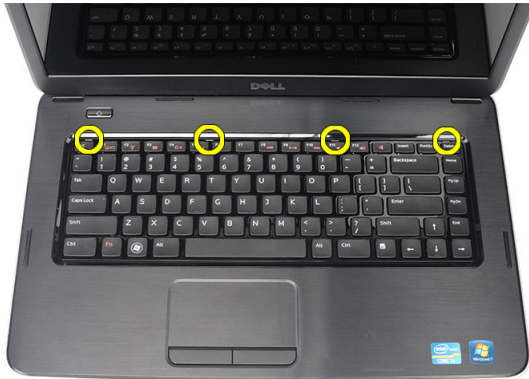
Removing the Hinge Cover

1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove the battery.
3. Remove the screw that secures the hinge cover.

4. Flip the computer and remove the hinge cover.

Installing the Hinge Cover

1. Install the hinge cover and press on it to secure it to the computer.
2. Flip the computer and install the screw that secures the hinge cover.
3. Install the battery.
4. Follow the procedures in *After Working Inside Your Computer*.

Removing the Keyboard

1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove the battery.
3. Pry up to release the tabs securing the keyboard to the computer.

4. Flip the keyboard and lay it on the palmrest.

5. Disconnect the keyboard cable from the system board.

6. Remove the keyboard from the computer.

Installing the Keyboard

1. Connect the keyboard cable to the system board.
2. Insert the keyboard at an angle of 30 degrees to its compartment.
3. Press down on the keyboard until it clicks into place.
4. Install the battery.
5. Follow the procedures in *After Working Inside Your Computer*.

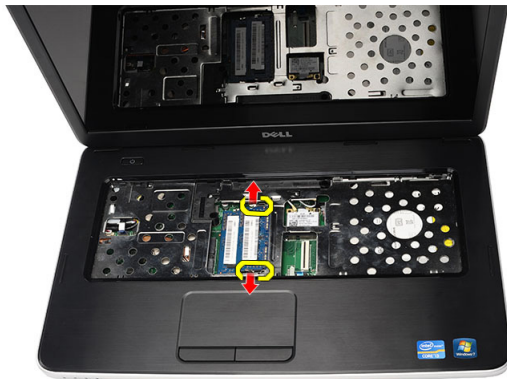
Removing the Optical Drive

1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove the battery.
3. Remove the keyboard.
4. Remove the screw that secures the optical drive.
5. Slide the optical drive out of the computer.

Installing the Optical Drive

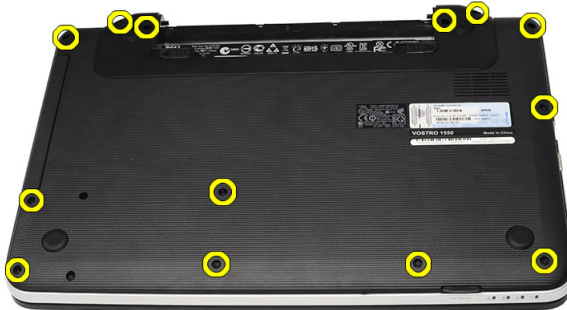
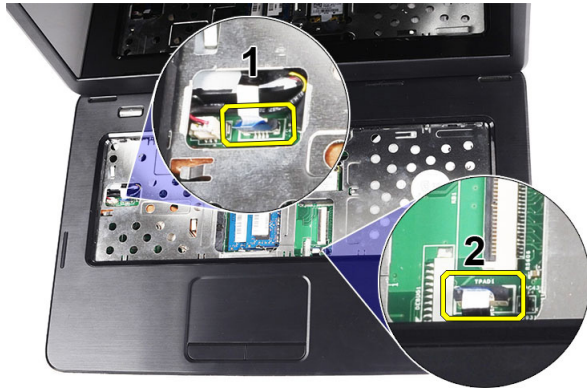
1. Slide the optical drive into the compartment on the left side of the chassis.
2. Tighten the screw to secure the optical drive to the computer.
3. Install the keyboard.
4. Install the battery.
5. Follow the procedures in *After Working Inside Your Computer*.

Removing the Memory Module

1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove the battery.
3. Remove the keyboard.
4. Pry the retention clips away from the memory module until it pops up.
5. Remove the memory module from the computer.

Installing the Memory Module

1. Insert the memory module into the memory socket.
2. Press down on the memory module until the retention clips secure the memory module in place.
3. Install the keyboard.
4. Install the battery.
5. Follow the procedures in *After Working Inside Your Computer*.

Removing the Palmrest

1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove the battery.
3. Remove the keyboard.
4. Remove the screws that secure the bottom base.

5. Flip the computer and disconnect the power board cable (1) and the touchpad cable (2).

6. Remove the screws that secure the palmrest to the computer.

7. Starting from the left pry up the palmrest and remove it from the computer.

Installing the Palmrest

1. Insert the palmrest towards the display screen at a 30–degree angle.
2. Align and adjust the palmrest into position before pressing it down.
3. Connect the power board cable and touchpad cable to their respective connectors.
4. Tighten the screws that secure the palmrest to the computer.
5. Flip the computer and install the screws that secure the bottom base.

6. Install the keyboard.
7. Install the battery.
8. Follow the procedures in *After Working Inside Your Computer*.

Removing the Power-Button Board

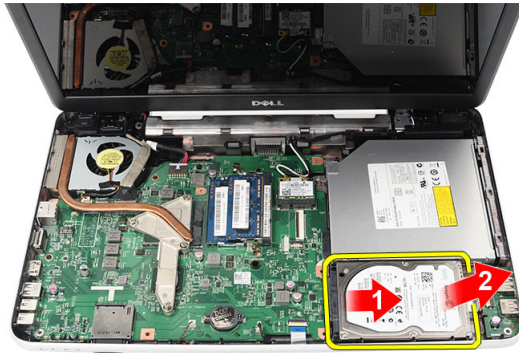
1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove:
   a) battery
   b) keyboard
   c) palmrest
3. Peel the power-button board cable from the adhesive affixing it to the palmrest.
4. Flip the palmrest and remove the screw that secures the power-button board to the palmrest.
5. Lift up the power-button board and release the power-button board cable through the opening.

Installing the Power-Button Board

1. Insert the power-button board cable through the opening.
2. Fix the power-button board to its compartment.
3. Tighten the screw to secure the power-button board.
4. Flip the computer and attach the power-button board cable to the palmrest.
5. Install:
   a) palmrest
   b) keyboard
   c) battery
6. Follow the procedures in *After Working Inside Your Computer*.

Removing the Hard Drive

1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove:
   a) battery
   b) keyboard
   c) palmrest
3. Remove the screws that secure the hard-drive bracket.

4. Slide and lift the hard drive and lift it out of the computer.

Installing the Hard Drive

1. Install the hard-drive bracket to the hard drive.
2. Tighten the screws that secure the hard-drive bracket.
3. Place the hard drive in its compartment and slide it towards the SATA connector to secure it to the system board.
4. Install:
   a) palmrest
   b) keyboard
   c) battery
5. Follow the procedures in *After Working Inside Your Computer*.

Removing the Wireless Local Area Network (WLAN) Card

1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove:
   a) battery
   b) keyboard
   c) palmrest
3. Disconnect the antennae connected to the WLAN card.
4. Pry the latch to release the WLAN card from its compartment.

5. Remove the WLAN card from the computer.

Installing the Wireless Local Area Network (WLAN) Card

1. Slide the WLAN card into its slot.
2. Clip on the WLAN card to the latch to secure it in place.
3. Connect the antennae according to the color code on the WLAN card.
4. Install:
   a) palmrest
   b) keyboard
   c) battery
5. Follow the procedures in *After Working Inside Your Computer*.

Removing the Coin-Cell Battery

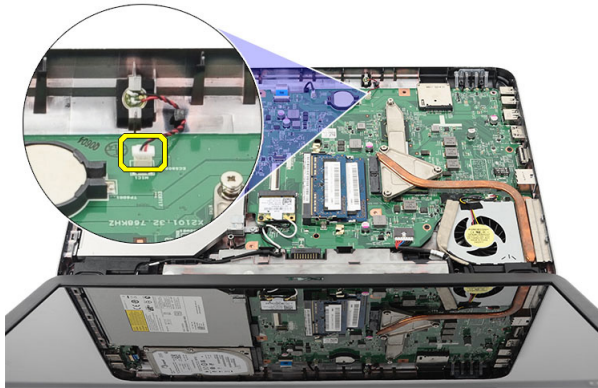
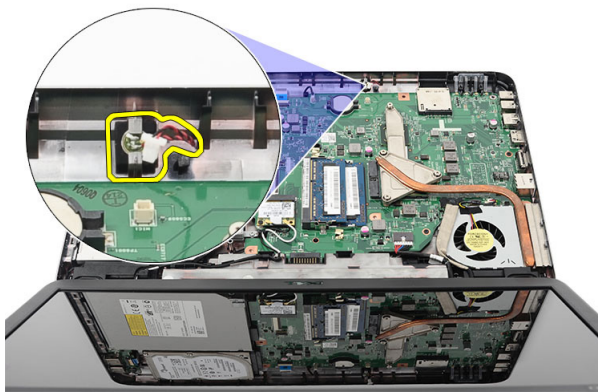
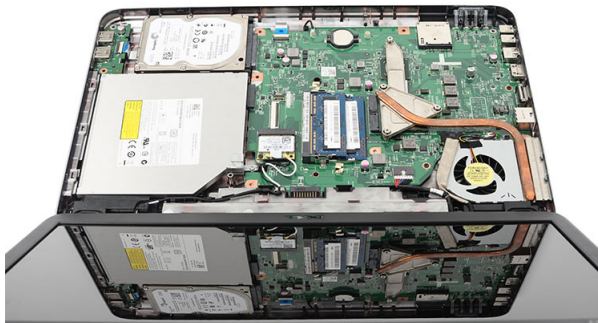
1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove:
   a) battery
   b) keyboard
   c) palmrest
3. Disconnect the coin-cell battery cable from the system board.

4. Remove the coin-cell battery from the computer.

Installing the Coin-Cell Battery

1. Install the coin-cell battery in the coin-cell battery compartment.
2. Connect the coin-cell battery cable to the system board.
3. Install:
   a) palmrest
   b) keyboard
   c) battery
4. Follow the procedures in *After Working Inside Your Computer*.

Removing the USB Board

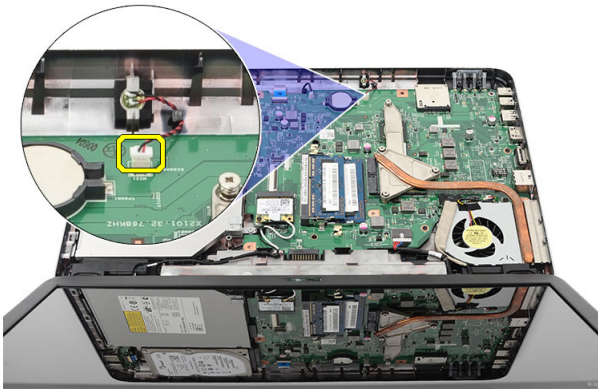
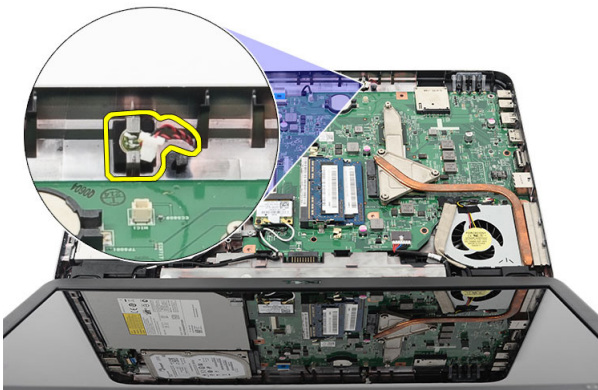
1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove:
   a) battery
   b) keyboard
   c) optical drive
   d) palmrest
3. Disconnect the USB board cable from the system board.

4. Remove the screw that secures the USB board.

5. Lift up the USB board and remove it from the computer.

Installing the USB Board

1. Insert and align the USB board into its compartment on the computer.
2. Install the screw that secures the USB board in place.
3. Connect the USB board cable to the system board.
4. Install:
   a) palmrest

b) optical drive
c) keyboard
d) battery

5. Follow the procedures in *After Working Inside Your Computer*.

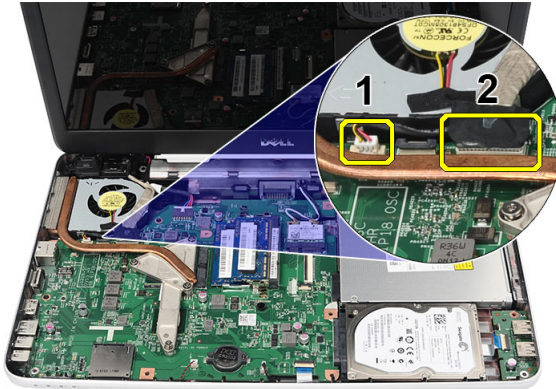
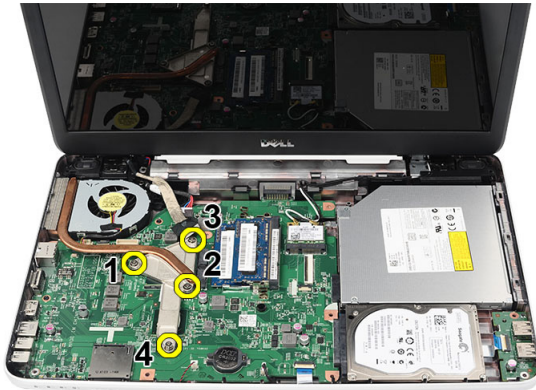
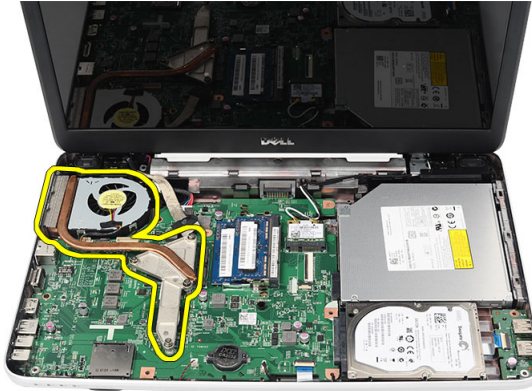
Removing the Microphone

1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove:
    a) battery
    b) keyboard
    c) palmrest
3. Disconnect the microphone cable from the system board.
4. Lift up and remove the microphone from its compartment.

Installing the Microphone

1. Insert and align the microphone into its compartment.
2. Connect the microphone cable to the system board.
3. Install:
    a) palmrest
    b) keyboard
    c) battery

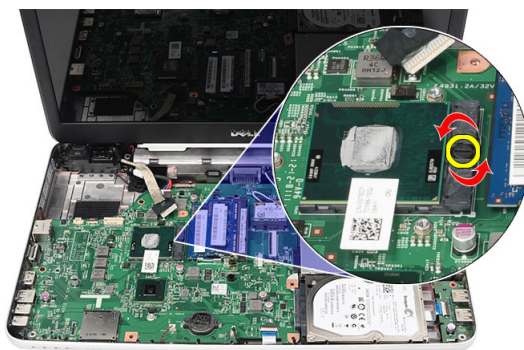
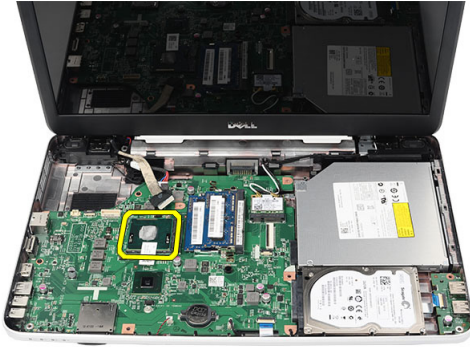
4. Follow the procedures in *After Working Inside Your Computer*.

Removing the Heat-Sink Fan Assembly

1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove:
   a) battery
   b) keyboard
   c) palmrest
3. Disconnect the CPU-fan cable from the system board.
4. Remove the captive screws that secure the heat-sink fan assembly by following the sequence in the image.
5. Remove the heat-sink fan assembly from the computer.

Installing the Heat-Sink Fan Assembly

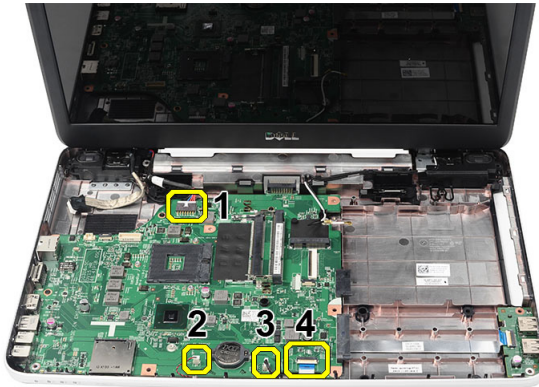
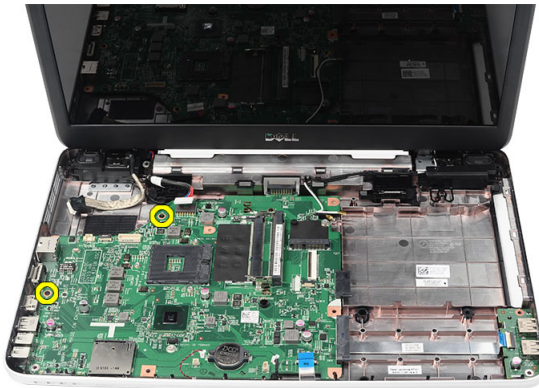
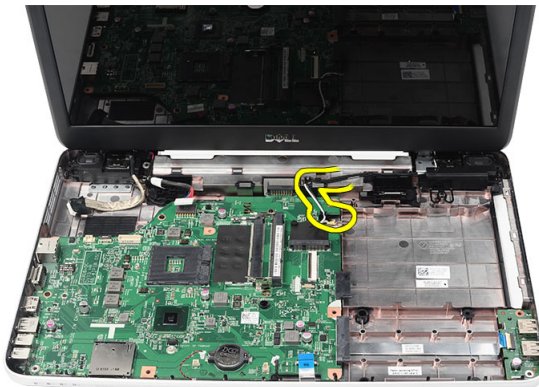
1. Place and align the heat-sink fan assembly.
2. Tighten the captive screws to secure the heat-sink fan assembly.
3. Connect the CPU-fan cable to the system board.
4. Install:
   a) palmrest
   b) keyboard
   c) battery
5. Follow the procedures in *After Working Inside Your Computer*.

Removing the Processor

1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove:
   a) battery
   b) keyboard
   c) palmrest
   d) heat-sink fan assembly
3. Rotate the processor-cam screw in a counter-clockwise direction.
4. Lift up the processor and remove it from the computer.

Installing the Processor

1. Insert the processor into the processor socket. Ensure the processor is properly seated.
2. Tighten the cam-screw in a clockwise direction to the locked position.
3. Install:
   a) heat-sink fan assembly
   b) palmrest
   c) keyboard
   d) battery
4. Follow the procedures in *After Working Inside Your Computer*.

Removing the System Board

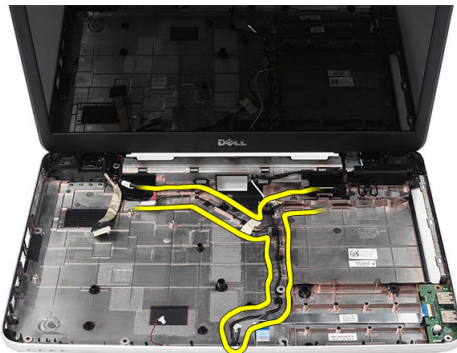
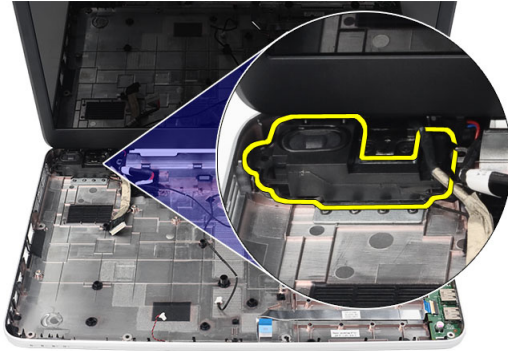
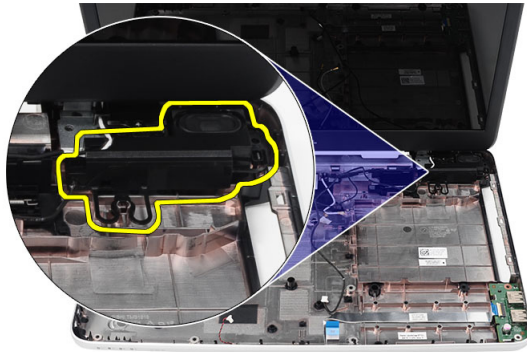
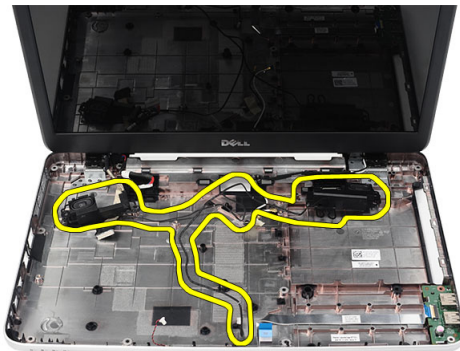
1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove:
   a) battery
   b) SD memory card
   c) keyboard
   d) optical drive
   e) memory module
   f) palmrest
   g) hard drive
   h) WLAN card
   i) heat-sink fan assembly
3. Disconnect the display cable (1), power-connector cable (2), USB board cable (3), speaker cable (4).

4. Remove the screws that secure the system board.

5. Lift up the system board at an angle and slide it out from the LAN, VGA, HDMI, and USB sockets.

Installing the System Board

1. Insert the system board with the LAN, VGA, HDMI, and USB connectors into their respective sockets and align the system board in place.
2. Install the screw that secure the system board in place.
3. Connect the LCD cable, power connector cable, USB board cable, audio board cable, coin-cell battery cable, and the speaker cable.
4. Install:

a) processor
b) heat-sink fan assembly
c) WLAN card
d) hard drive
e) palmrest
f) memory module
g) optical drive
h) keyboard
i) SD memory card
j) battery

5. Follow the procedures in *After Working Inside Your Computer*.

Removing the Speakers

1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove:
   a) battery
   b) SD memory card
   c) keyboard
   d) optical drive
   e) memory module
   f) palmrest
   g) hard drive
   h) WLAN card
   i) heat-sink fan assembly
   j) system board
3. Release the speaker cable from the routing channel.
4. Press the securing latches and lift up the left speaker.

5. Press the securing latches and lift up the right speaker.

6. Remove the speaker assembly and the speaker cable from the computer.

Installing the Speakers

1. Insert and attach the left and right speakers into their respective compartments.
2. Align and route the speaker cable to the chassis.
3. Install:
   a) system board
   b) processor
   c) heat-sink fan assembly

d) WLAN card
e) hard drive
f) palmrest
g) memory module
h) optical drive
i) keyboard
j) SD memory card
k) battery

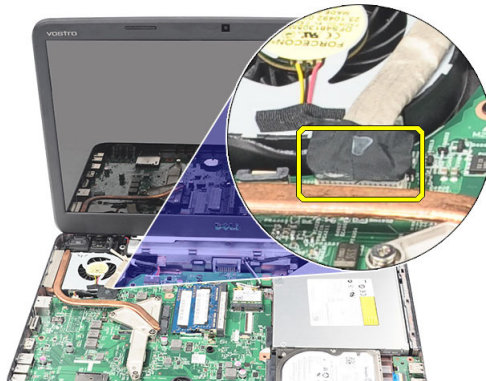
4. Follow the procedures in *After Working Inside Your Computer*.

Removing the Display Assembly

1. Follow the procedures in *Before Working Inside Your Computer*.

2. Remove:

   a) battery
   b) hinge cover
   c) keyboard
   d) palmrest

3. Disconnect the low-voltage differential signaling (LVDS) cable from the system board.

4. Disconnect the WLAN antennae and release it from the routing channel on the chassis.

5. Remove the screws that secure the left and right hinges.

6. Lift up the display assembly and remove it from the computer.

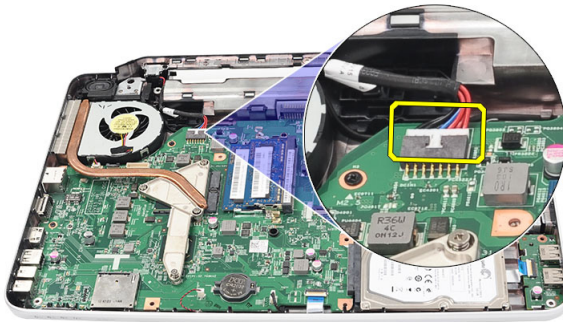
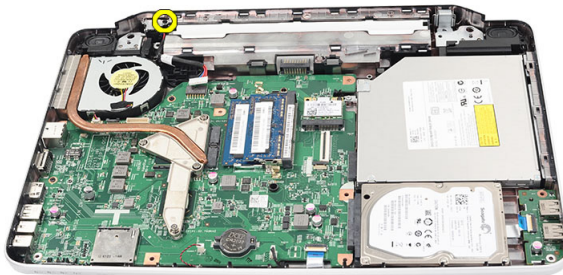
Installing the Display Assembly

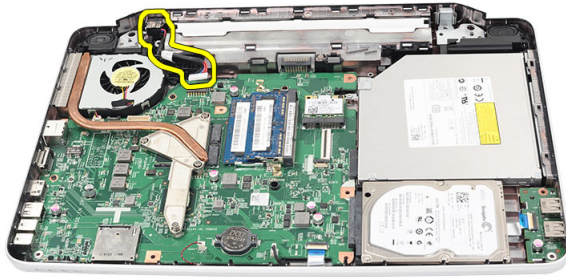
1. Insert the display assembly hinges into their holders.
2. Install the screw that secure both the hinges in place.
3. Connect the LVDS cable to the system board.
4. Align the WLAN antennae routing cable to its holder and connect the antennae to the WLAN card.
5. Connect the USB board cable.
6. Install:
   a) palmrest
   b) keyboard
   c) hinge cover
   d) battery
7. Follow the procedures in *After Working Inside Your Computer*.

Removing the Power-Connector Port and Bracket

1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove:
   a) battery
   b) hinge cover
   c) keyboard

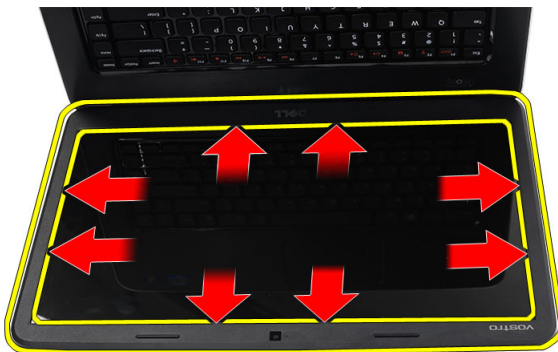
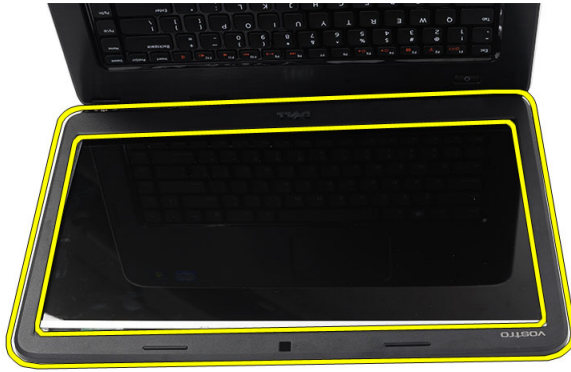
d) palmrest
e) display assembly

3. Disconnect the power-connector cable from the system board.

4. Remove the screw that secures the power-connector port and bracket.

5. Lift up the power-connector port bracket.

6. Lift up the power connector-port from the computer and remove it.

Installing the Power-Connector Port and Bracket

1. Insert the power-connector port and the bracket into its compartment.
2. Align the bracket and tighten the screw that secures the bracket and power connector.
3. Connect the power-connector cable to the system board.
4. Install:
   a) display assembly
   b) palmrest
   c) keyboard
   d) hinge cover
   e) battery
5. Follow the procedures in *After Working Inside Your Computer*.

Removing the Display Bezel

1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove the battery.
3. Starting from the bottom, pry the bezel inside out from the display assembly and work your way to the right and the left corners of the display bezel.
4. Remove the bezel from the display assembly once all the tabs have been loosened.

Installing the Display Bezel

1. Align the display bezel in line with the top cover.
2. Starting from the bottom edge, press downward on the display bezel until it clicks into place.
3. Install the battery.
4. Follow the procedures in *After Working Inside Your Computer*.

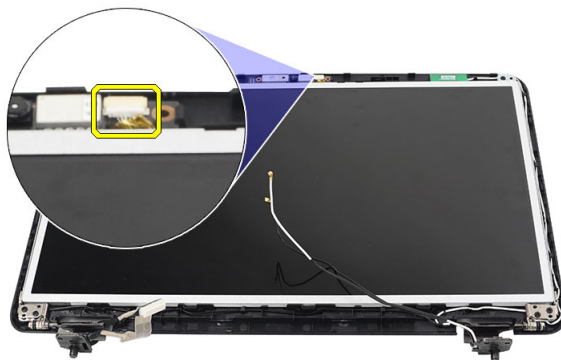
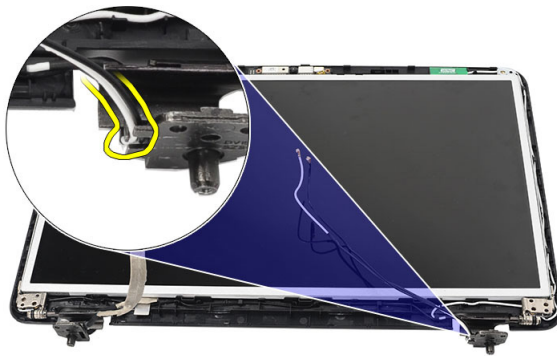
Removing the Camera

1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove the battery.
3. Remove the display bezel.
4. Disconnect the camera cable from the camera module.
5. Pry the latch, lift up the camera, and remove it from the computer.

Installing the Camera

1. Insert and align the camera module to its compartment.
2. Connect the camera cable to the camera module.
3. Install the display bezel.
4. Install the battery.
5. Follow the procedures in *After Working Inside Your Computer*.

Removing the Display Panel

1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove:
   a) battery
   b) hinge cover
   c) keyboard
   d) palmrest
   e) display assembly
   f) display bezel
3. Disconnect the camera cable from the camera module.
4. Remove the screws that secure the display brackets and hinges.

5. Release the wireless antennae from the right hinge.

6. Release the low-voltage differential singnaling (LVDS) cable from the left hinge.

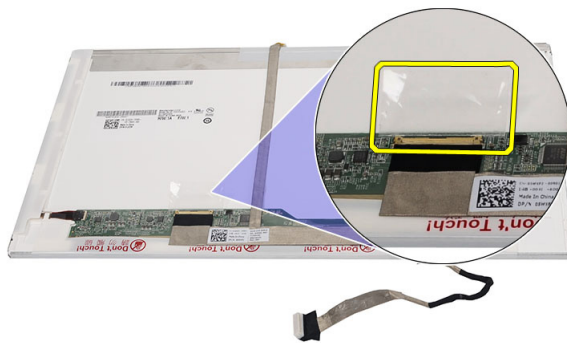
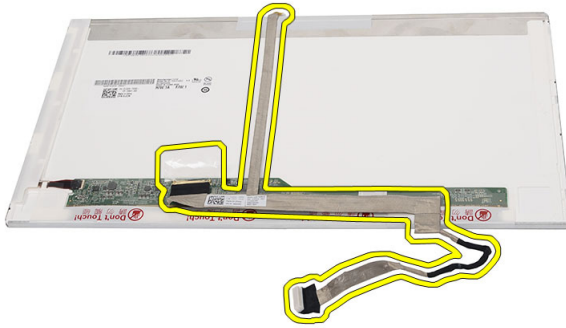
7. Lift up the display panel and brackets from the display top cover.

8. Remove the screws on the left and right display brackets. Remove the display panel.

Installing the Display Panel

1. Align and place the left and right brackets to the display panel. Tighten the screws and secure the brackets to their positions.
2. Insert and route the display cable and wireless antennae to the left and right hinges.
3. Attach the low-voltage differential singnaling (LVDS) cable to the left hinge.
4. Align the display panel with its brackets to the top cover.
5. Align the WLAN antennae routing cable to its holder and connect the antennae to the WLAN card.
6. Install the screw that secures the display panel and the brackets.
7. Connect the camera cable to the camera module.
8. Install:
   a) display bezel
   b) display assembly
   c) palmrest
   d) keyboard
   e) hinge cover
   f) battery
9. Follow the procedures in *After Working Inside Your Computer*.

Removing the Low-Voltage Differential Signaling (LVDS) Cable

1. Follow the procedures in *Before Working Inside Your Computer*.
2. Remove:
   a) battery
   b) hinge cover
   c) keyboard
   d) optical drive
   e) palmrest
   f) display assembly
   g) display bezel
   h) display panel
3. Peel off the tape securing the LVDS cable connection.
4. Disconnect the LVDS cable from the display panel.
5. Peel off the display cable from the adhesive affixing it to the display panel.

Installing the Low-Voltage Differential Signaling (LVDS) Cable

1. Attach the display cable to the display panel.
2. Connect the display cable connector to the display panel and affix the tape to secure it.
3. Install:
   a) display panel
   b) display bezel
   c) display assembly
   d) palmrest
   e) optical drive
   f) keyboard
   g) hinge cover
   h) battery
4. Follow the procedures in *After Working Inside Your Computer*.

3

System Setup

System Setup enables you to manage your computer hardware and specify BIOS-level options. From the System Setup, you can:

- Change the NVRAM settings after you add or remove hardware
- View the system hardware configuration
- Enable or disable integrated devices
- Set performance and power management thresholds
- Manage your computer security

Boot Sequence

Boot Sequence allows you to bypass the System Setup-defined boot device order and boot directly to a specific device (for example: optical drive or hard drive). During the Power-on Self Test (POST), when the Dell logo appears, you can:

- Access System Setup by pressing <F2> key
- Bring up the one-time boot menu by pressing <F12> key

The one-time boot menu displays the devices that you can boot from including the diagnostic option. The boot-menu options are:

- Removable Drive (if available)
- STXXXX Drive

  NOTE: XXX denotes the SATA drive number.
- Optical Drive
- Diagnostics

  NOTE: Choosing Diagnostics, will display the **ePSA diagnostics** screen.

The boot sequence screen also displays the option to access the System Setup screen.

Navigation Keys

The following table displays the system setup navigation keys.

NOTE: For most of the system setup options, changes that you make are recorded but do not take effect until you restart the system.

Table 1. Navigation Keys

Keys	Navigation
Up arrow	Moves to the previous field.
Down arrow	Moves to the next field.

Keys	Navigation
<Enter>	Allows you to select a value in the selected field (if applicable) or follow the link in the field.
Spacebar	Expands or collapses a drop-down list, if applicable.
<Tab>	Moves to the next focus area. **NOTE:** For the standard graphics browser only.
<Esc>	Moves to the previous page till you view the main screen. Pressing <Esc> in the main screen displays a message that prompts you to save any unsaved changes and restarts the system.
<F1>	Displays the System Setup help file.

System Setup Options

Main

System Information	Displays the computer model number.
System Date	Re-sets the date on the computer's internal calendar.
System Time	Re-sets the time on the computer's internal clock.
BIOS Version	Displays the BIOS revision.
Product Name	Displays the product name and the model number.
Service Tag	Displays the service tag of your computer.
Asset Tag	Displays the asset tag of your computer (if available).
CPU Type	Displays the type of processor.
CPU Speed	Displays the speed of the processor.
CPU ID	Displays the processor ID.
L1 Cache Size	Displays the processor L1 cache size.
L2 Cache Size	Displays the processor L2 cache size.
L3 Cache Size	Displays the processor L3 cache size.
Extended Memory	Displays the memory installed on the computer.
System Memory	Displays the memory in-built on the computer.
Memory Speed	Displays the memory speed.
Fixed HDD	Displays the model number and capacity of the hard drive.
SATA ODD	Displays the model number and capacity of the optical drive.
AC Adapter Type	Displays the type of the AC adapter.

Advanced

Intel SpeedStep	Enable or disable the Intel SpeedStep feature.	Default: Enabled
Virtualization	Enable or disable the Intel Virtualization feature.	Default: Enabled
Integrated NIC	Enable or disable the power supply to the on–board network card.	Default: Enabled
USB Emulation	Enable or disable the USB emulation feature.	Default: Enabled
USB Wake Support	Allows USB devices to wake-up the computer from standby. This feature is enabled only when the AC adapter is connected.	Default: Disabled
SATA Operation	Change the SATA controller mode to either ATA or AHCI.	Default: AHCI
Adapter Warnings	Enables or disables adapter warnings.	Default: Enabled
Function Key Behavior	Specifies the behavior of the function key <Fn> .	Default: Function key first
Charger Behavior	Specifies if the computer battery will be charged when connected to an AC power source.	Default: Enabled
Miscellaneous Devices	These fields let you enable or disable various on-board devices.	

Security

Set Service Tag	This field displays your system's service tag. If the service tag is not already set, this field can be used to enter it.
Set Supervisor Password	Allows you to change or delete the administrator password.
Set HDD Password	Allows you to set a password on the computer's internal hard drive (HDD).
Password Bypass	Allows you to bypass the system password and the internal HDD password prompts during a system restart/ resume from hibernate state.
Computrace	Enable or disable the Computrace feature on your computer.

Boot

Boot Priority Order	Specifies the order of different devices in which the computer will boot through at start up.
Hard Disk Drives	Specifies which hard drive the computer can boot through.
USB Storage Device	Specifies which USB storage device the computer can boot through.
CD/DVD ROM Drives	Specifies which CD/DVD the computer can boot through.
Network	Specifies which network device the computer can boot through.

Exit

This section allows you to save, discard, and load default settings before exiting from System Setup.

Updating the BIOS

It is recommended to update your BIOS (system setup), on replacing the system board or if an update is available. For notebooks, ensure that your computer battery is fully charged and connected to a power outlet

1. Restart the computer.
2. Go to **support.dell.com/support/downloads**.
3. If you have your computer's Service Tag or Express Service Code:

   NOTE: For desktops, the service tag label is available on the front of your computer.

   NOTE: For notebooks, the service tag label is available on the bottom of your computer.

   a) Enter the **Service Tag** or **Express Service Code** and click **Submit**.
   b) Click **Submit** and proceed to step 5.
4. If you do not have your computer's service tag or express service code, select one of the following:
   a) **Automatically detect my Service Tag for me**
   b) **Choose from My Products and Services List**
   c) **Choose from a list of all Dell products**
5. On the application and drivers screen, under the **Operating System** drop-down list, select **BIOS**.
6. Identify the latest BIOS file and click **Download File**.
7. Select your preferred download method in the **Please select your download method below window**; click **Download Now**.

   The **File Download** window appears.
8. Click **Save** to save the file on your computer.
9. Click **Run** to install the updated BIOS settings on your computer.

   Follow the instructions on the screen.

System and Setup Password

You can create a system password and a setup password to secure your computer.

Password Type	Description
System password	Password that you must enter to log on to your system.
Setup password	Password that you must enter to access and make changes to the BIOS settings of your computer.

CAUTION: The password features provide a basic level of security for the data on your computer.

CAUTION: Anyone can access the data stored on your computer if is not locked and left unattended.

NOTE: Your computer is shipped with the system and setup password feature disabled.

Assigning a System Password and Setup Password

You can assign a new **System Password** and/or **Setup Password** or change an existing **System Password** and/or **Setup Password** only when **Password Status** is **Unlocked**. If the Password Status is **Locked**, you cannot change the System Password.

NOTE: If the password jumper is disabled, the existing System Password and Setup Password is deleted and you need not provide the system password to log on to the computer.

To enter a system setup, press <F2> immediately after a power-on or reboot.

1. In the **System BIOS** or **System Setup** screen, select **System Security** and press <Enter>.
   The **System Security** screen appears.
2. In the **System Security** screen, verify that **Password Status** is **Unlocked**.
3. Select **System Password** , enter your system password, and press <Enter> or <Tab>.
   Use the following guidelines to assign the system password:
   – A password can have up to 32 characters.
   – The password can contain the numbers 0 through 9.
   – Only lower case letters are valid, upper case letters are not allowed.
   – Only the following special characters are allowed: space, (”), (+), (,), (-), (.), (/), (;), ([), (\), (]), (`).

   Re-enter the system password when prompted.
4. Type the system password that you entered earlier and click **OK**.
5. Select **Setup Password**, type your system password and press <Enter> or <Tab>.
   A message prompts you to re-type the setup password.
6. Type the setup password that you entered earlier and click **OK**.
7. Press <Esc> and a message prompts you to save the changes.
8. Press <Y> to save the changes.
   The computer reboots.

Deleting or Changing an Existing System and/or Setup Password

Ensure that the **Password Status** is Unlocked (in the System Setup) before attempting to delete or change the existing System and/or Setup password. You cannot delete or change an existing System or Setup password, if the **Password Status** is Locked.

To enter the System Setup, press <F2> immediately after a power-on or reboot.

1. In the **System BIOS** or **System Setup** screen, select **System Security** and press <Enter>.
   The **System Security** screen is displayed.
2. In the **System Security** screen, verify that **Password Status** is **Unlocked**.
3. Select **System Password**, alter or delete the existing system password and press <Enter> or <Tab>.
4. Select **Setup Password**, alter or delete the existing setup password and press <Enter> or <Tab>.

   NOTE: If you change the System and/or Setup password, re-enter the new password when promoted. If you delete the System and/or Setup password, confirm the deletion when promoted.
5. Press <Esc> and a message prompts you to save the changes.
6. Press <Y> to save the changes and exit from the System Setup.
   The computer reboots.

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Diagnostics

If you experience a problem with your computer, run the ePSA diagnostics before contacting Dell for technical assistance. The purpose of running diagnostics is to test your computer's hardware without requiring additional equipment or risking data loss. If you are unable to fix the problem yourself, service and support personnel can use the diagnostics results to help you solve the problem.

Enhanced Pre-Boot System Assessment (ePSA) Diagnostics

The ePSA diagnostics (also known as system diagnostics) performs a complete check of your hardware. The ePSA is embedded with the BIOS and is launched by the BIOS internally. The embedded system diagnostics provides a set of options for particular devices or device groups allowing you to:

- Run tests automatically or in an interactive mode
- Repeat tests
- Display or save test results
- Run thorough tests to introduce additional test options to provide extra information about the failed device(s)
- View status messages that inform you if tests are completed successfully
- View error messages that inform you of problems encountered during testing

CAUTION: Use the system diagnostics to test only your computer. Using this program with other computers may cause invalid results or error messages.

NOTE: Some tests for specific devices require user interaction. Always ensure that you are present at the computer terminal when the diagnostic tests are performed.

1. Power-on the computer.
2. As the computer boots, press the <F12> key as the Dell logo appears.
3. On the boot menu screen, select the **Diagnostics** option.

   The **Enhanced Pre-boot System Assessment** window is displayed, listing all devices detected in the computer. The diagnostics starts running the tests on all the detected devices.
4. If you wish to run a diagnostic test on a specific device, press <Esc> and click **Yes** to stop the diagnostic test.
5. Select the device from the left pane and click **Run Tests**.
6. If there are any issues, error codes are displayed.

   Note the error code and contact Dell.

Battery Status Lights

If the computer is connected to an electrical outlet, the battery light operates as follows:

- **Alternately blinking amber light and white light** — An unauthenticated or unsupported non-Dell AC adapter is attached to your laptop.
- **Alternately blinking amber light with steady white light** — Temporary battery failure with AC adapter present.
- **Constantly blinking amber light** — Fatal battery failure with AC adapter present.

- **Light off** — Battery in full charge mode with AC adapter present.
- **White light on** — Battery in charge mode with AC adapter present.

Device Status Lights

⏻	Turns on when you turn on the computer and blinks when the computer is in a power management mode.
	Turns on when the computer reads or writes data.
	Turns on steadily or blinks to indicate battery charge status.
	Turns on when wireless networking is enabled.

Diagnostic Beep Codes

The computer may emit a series of beeps during start-up if the display cannot show errors or problems. These series of beeps, called beep codes, identify various problems. The delay between each beep is 300 ms, the delay between each set of beeps is 3 seconds, and the beep sound lasts 300 ms. After each beep and each set of beeps, the BIOS should detect if the user presses the power button. If so, BIOS will jump out from looping and execute the normal shutdown process and power system.

Code	Cause and Troubleshooting Steps
1	BIOS ROM checksum in progress or failure System board failure, covers BIOS corruption or ROM error
2	No RAM detected No memory detected
3	Chipset Error (North and South Bridge Chipset, DMA/IMR/ Timer Error) , Time-Of-Day Clock test failure , Gate A20 failure , Super I/O chip failure , Keyboard controller test failure System board failure
4	RAM Read/Write failure Memory failure
5	Real-time clock power fail CMOS battery failure
6	Video BIOS test failure Video card failure
7	Processor failure Processor failure
8	Display Display failure

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Technical Specifications

NOTE: Offerings may vary by region. For more information regarding the configuration of your computer, click Start **(Start icon) → Help and Support**, and then select the option to view information about your computer.

Table 2. System Information

Feature	Specification
Chipset	Intel HM75 Express chipset
DRAM bus width	64-bit
Flash EPROM	SPI 32 Mbits

Table 3. Processor

Feature	Specification
Types	• Intel Celeron • Intel Core i3 series • Intel Core i5 series
L2 cache	up to 6 MB

Table 4. Memory

Feature	Specification
Memory connector	two SODIMM slots
Memory capacity	2 GB or 4 GB
Memory type	DDR3 SDRAM (1333 MHz and 1600 MHz)
Minimum memory	1 GB
Maximum memory	8 GB

Table 5. Audio

Feature	Specification
Type	2.1 channel high definition audio
Controller	Cirrus Logic CS4213D
Stereo conversion	24-bit (analog-to-digital and digital-to-analog)
Interface:	
Internal	high definition audio

Feature	Specification
External	microphone-in/stereo headphones/external speakers connector
Speakers	2 x 2 Watt
Volume controls	keyboard function keys and program menus

Table 6. Video

Feature	Specification
Video type	• integrated on system board • discrete
Data bus:	
UMA	integrated video
Discrete	• PCI-E x16 Gen1 • PCI-E x16 Gen2
Video controller:	
UMA	• Intel HD Graphics • Intel HD Graphics 3000 • Intel HD Graphics 4000
Discrete (Vostro 2420)	nVidia GeForce GT 620M

Table 7. Camera

Feature	Specification
Camera resolution	1.3 Mega-pixel
Video resolution (maximum)	640 x 480 at 30 FPS

Table 8. Communications

Feature	Specification
Network adapter	10/100/1000 Mbps Ethernet LAN
Wireless	internal wireless local area network (WLAN)

Table 9. Ports and Connectors

Feature	Specification
Audio	one microphone connector; one stereo headphone/speakers connector
Video	• one 15-pin VGA connector • one 19-pin HDMI connector

Feature	Specification
Network adapter	one RJ-45 connector
USB	three 4-pin USB, 2.0-compliant connectors
Media card reader	one 3-in-1 (SD/MMC/MS)

Table 10. Display

Feature	Vostro 2420	Vostro 2520
Type	HD WLED TrueLife; HD WLED AG	
Size	14.0 inches	15.0 inches
Dimensions:		
Height	192.50 mm (7.58 inches)	193.50 mm (7.62 inches)
Width	324.00 mm (12.76 inches)	344.20 mm (13.55 inches)
Diagonal	355.60 mm (14.00 inches)	396.24 mm (15.60 inches)
Active area (X/Y)	309.40 mm x 173.95 mm	344.23 mm x 193.54 mm
Maximum brightness	200 nits	220 nits
Maximum resolution	1366 x 768 pixels at 262K colors	
Operating angle	0° (closed) to 140°	
Refresh rate	60 Hz	
Minimum viewing angles:		
Horizontal	40°/40°	
Vertical	15°/30° (H/L)	
Pixel pitch	0.252 mm X 0.252 mm	

Table 11. Keyboard

Feature	Specification
Number of keys	• United States and Canada • 86 keys, Europe and Brazil 87 keys • Japan: 90 keys

Table 12. Touchpad

Feature	Specification
Active Area:	
X-axis	90.00 mm (3.54 inches)
Y-axis	49.00 mm (1.93 inches)

Table 13. Battery

Feature	Specification
Type	6-cell lithium ion (2.20 Whr)
Dimensions:	
Height	20.20 mm (0.80 inch)
Width	208.36 mm (8.20 inches)
Depth	56.52 mm (2.22 inches)
Weight	0.33 kg (0.73 lb)
Charge time	approximately 4 hours (when the computer is turned off)
Voltage	11.1 VDC
Temperature range:	
Operating	0 °C to 35 °C (32 °F to 95 °F)
Non-operating	–40 °C to 65 °C (–40 °F to 149 °F)
Coin-cell battery	3 V CR2032 lithium coin cell

Table 14. AC Adapter

Feature	Specification
Type:	
Vostro 2420 / Vostro 2520 with integrated video card	65 W
Vostro 2420 with discrete video card	90 W
Input voltage	100 VAC to 240 VAC
Input current (maximum)	1.50 A/1.60 A/1.70 A/2.50 A
Input frequency	50 Hz to 60 Hz
Output power	65 W and 90 W
Output current:	
65 W	3.34 A (continuous)
90 W	4.62 A
Rated output voltage	19.50 VDC (+/– 1.0 VDC)
Dimensions:	
Height	28.20 mm (1.11 inches)
Width	57.90 mm (2.28 inches)
Depth	137.16 mm (5.40 inches)
Temperature range:	

Feature	Specification
Operating	0 °C to 40 °C (32 °F to 104 °F)
Non-operating	–40 °C to 70 °C (–40 °F to 158 °F)

Table 15. Physical

Feature	Specification
Vostro 2420:	
Height (with a WLED panel)	31.50 mm to 34.70 mm (1.24 inches to 1.36 inches)
Width	342.00 mm (13.46 inches)
Depth	244 mm (9.60 inches)
Weight (minimum)	2.2 kg (4.85 lb)
Vostro 2520:	
Height (with a WLED panel)	31.50 mm to 34.50 mm (1.24 inches to 1.35 inches)
Width	376.00 mm (14.80 inches)
Depth	260 mm (10.23 inches)
Weight (minimum)	2.37 kg (5.22 lb)

Table 16. Environmental

Feature	Specification
Temperature:	
Operating	0 °C to 35 °C (32 °F to 95 °F)
Storage	–40 °C to 65 °C (–40 °F to 149 °F)
Relative humidity (maximum):	
Operating	10 % to 90 % (non-condensing)
Storage	5 % to 95 % (non-condensing)
Altitude (maximum):	
Operating	–15.2 m to 3048 m (–50 ft to 10,000 ft)
Non-operating	–15.2 m to 10,668 m (–50 ft to 35,000 ft)
Airborne contaminant level	G1 as defined by ISA-71.04–1985

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Contacting Dell

NOTE: If you do not have an active Internet connection, you can find contact information on your purchase invoice, packing slip, bill, or Dell product catalog.

Dell provides several online and telephone-based support and service options. Availability varies by country and product, and some services may not be available in your area. To contact Dell for sales, technical support, or customer service issues:

1. Visit **support.dell.com**.
2. Select your support category.
3. If you are not a U.S. customer, select your country code at the bottom of the **support.dell.com** page, or select **All** to see more choices.
4. Select the appropriate service or support link based on your need.